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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,554	07/10/2003	Zhenyu Jiang	BW-DKT03059	2798
32175	7590	04/08/2004	EXAMINER	
BORGWARNER INC. POWERTRAIN TECHNICAL CENTER 3800 AUTOMATION AVENUE, SUITE 100 AUBURN HILLS, MI 48326-1782			CORRIGAN, JAIME W	
		ART UNIT	PAPER NUMBER	
			3748	

DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/616,554	JIANG, ZHENYU
	Examiner	Art Unit
	Jaime W Corrigan	3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION

THE MAILING DATE OF THIS COMMUNICATION:

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on _____.
2a) This action is **FINAL**. 2b) This action is non-final.
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-11 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-11 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7-10-2003.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ .

5) Notice of Informal Patent Application (PTO-152)

6) Other: ____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kampf et al. (PN 5,341,675).

Regarding claim 1 Kampf discloses providing a cam sensor wheel (See Figure 6 (37)) having a plurality of teeth including an index (See Figure 6 (37)) tooth formed upon the circumference of the cam sensor wheel; providing a sequence of pulses (See Abstract, Column 5 Lines 52-68, Column 6 Lines 1-5) corresponding to the plurality of teeth; and using one tooth among the plurality of teeth for identifying the direction of cam torque (See Title, Abstract, Column 5 Lines 52-68, Column 6 Lines 1-51).

Regarding claim 2 Kampf discloses using the plurality of teeth to determine a dead time (See Column 1 Lines 64-68, Column 2 Lines 1-3).

Regarding claim 3 Kampf discloses the step of pausing controller

updating during dead time (See Column 1 Lines 64-68, Column 2 Lines 1-3), thereby when there is no torque available to drive the VCT (See Figure 1 (1), (2)) towards its commanded position, the controller stops accumulating unnecessary values.

Regarding claim 4 Kampf discloses the plurality of teeth is symmetrically (See Figure 6 (37)) distributed upon the circumference of the cam sensor wheel.

Regarding claim 5 Kampf discloses the plurality of teeth is asymmetrically (See Figure 8 (6), (7), (8), (9)) distributed upon the circumference of the cam sensor wheel.

Regarding claim 6 Kampf discloses the one tooth is the index tooth (See Figure 6 (37)).

Regarding claim 7 Kampf discloses the VCT system is a CTA VCT system (See Figure 6 (37)).

Regarding claim 8 Kampf discloses the VCT system is a TA VCT system (See Figure 6 (37)).

Regarding claim 9 Kampf discloses the VCT system is a OPA VCT system (See Figure 6 (37)).

Regarding claim 10 Kampf discloses the cam tooth wheel is asymmetric (See Figure 6 (20)).

Regarding claim 11 Kampf discloses the cam tooth wheel is symmetric (See Figure 5 (21)).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Scotti et al. (PN 6,131,686), Buckley et al. (PN 5,173,651) disclose similar VCT systems.

Any inquiry concerning this communication from the examiner should be directed to Examiner Jaime Corrigan whose telephone number is (703) 308-2639. The examiner can normally be reached on Monday - Friday from 8:30 a.m. – 6:00 p.m. 2nd Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reached on (703) 308-2623. The fax number for this group is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

JC

Jaime Corrigan
Jaime Corrigan

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Patent Examiner

April 05, 2004

Art Unit 3748

Thomas Denion
THOMAS DENION
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700